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Culture Employment in a North American Context

1981 to 2001

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Paul Sereda
Statistics Canada

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Acronyms

NAICS	North American Industrial Classification System
PUMS	Public Use Micro-data Sample

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Abstract

The culture sector has come to be recognized for both its economic and social contributions and the important role it plays in the vitality of a community. In addition to being a key defining aspect of a society, culture is a central element in the liveability of a city. This paper quantifies and assesses the role of culture employment in urban settings in Canada and the United States over the past two decades.

Canadian census data are used for the years 1981, 1991 and 2001 and U.S. census data for the years 1980, 1990 and 2000. The analysis is performed at both the national and metropolitan levels, with selected cities examined in greater detail. Data are reviewed descriptively and through regression analysis.

The results of the study indicate that, in both Canada and the United States, metropolitan areas typically had higher shares of culture sector employment compared to rural areas and the nation as a whole. Additionally, there is evidence to suggest a positive relationship between the share of employment in creative and artistic occupations and the population size of the city. Additionally, culture sector employment grew at a much greater rate than the workforce as a whole over the period 1981 to 2001.

In particular, there appear to be some key differences between Canada and the United States. These differences include stronger growth in employment in culture occupations in Canada than the United States, which caused Canada's share of the workforce in culture occupations to surpass that of the United States by the end of the period. Another difference is that the proportion of culture occupation employment in performing arts occupations is higher in Canada than the United States. Overall this study shows that Canada's culture sector has been performing well and that large cities have played an important role in this.

1. Introduction

Canada has a history of encouraging the development of culture.[1] At least in part, this has been in reaction to the influence of the United States on the consumption and production of Canadian culture. This paper analyzes the nature of culture employment in Canada and the United States in the national context and across the urban-rural spectrum through the 1980s and 1990s. In so doing, we are able to assess the relative importance of culture employment in Canada and the United States, as well as how Canadian cities rank as centres of culture production within a North American context.

Culture makes a critically important contribution to the economic and social prosperity of cities.[2] As a result, there is considerable interest in how culture employment is distributed, in which places it is concentrated and why. This analysis seeks to identify cities in which culture employment is concentrated either in terms of absolute size or in share of employment. Of particular interest is how Canadian cities perform relative to their counterparts in the United States.

In addition to measuring the relative performance of Canadian and U.S. cities, we are also interested in identifying the relation between city size on the concentration of culture employment. In Canada, culture is known to cluster in larger urban centres.[3] In this paper, the distribution of culture occupations across cities and between cities and rural areas in North America is examined to determine whether urban-rural location or population size affects the prevalence of culture employment.

There are two rationales for investigating culture employment at the metropolitan level. The first is to determine the extent to which culture is a big-city phenomenon, and the second is to consider the degree to which there may be significant specialization in the most important culture centers. An example of this is the specialization in film production found in Los Angeles and Vancouver.[4]

The remainder of the paper is organized as follows. In the next section, the data sources and methodology are presented. Section three analyses the distribution of culture employment across North America using the share of culture employment, as well as how the share of culture employment is affected by population. Section four develops a more in-depth analysis of the growth of culture employment between 1981 and 2001. Lastly, for further analysis, culture employment is separated into three sub-groups for ten selected cities.

2. Methodology and data

In order to develop a comparison of culture employment in Canada and the United States over time, at the national level and across cities, it was necessary to develop a data set that provided an estimate of culture employment in both countries that is consistent over time. For this research, the primary data source is the Census of Population. This analysis consists of both time-series and cross-sectional analysis of Canadian and U.S. census data.

This paper utilizes occupation data reported on the Census to derive employment levels for selected categories, namely, heritage occupations, creative and artistic culture occupations, non-culture occupations, and the total workforce. Alternatively, we could have analyzed industry-based employment data. We used an occupation-based measure for two reasons. First, it defines persons producing culture output, whereas an industry definition is much broader. Second, it is very difficult to consistently measure industry employment over time (because of changing definitions) and between Canada and the United States (because of differences in their industrial coding systems). It is also important to note that in this report, workforce refers only to the employed portion of the labour force.

For the purposes of this paper, the definitions of culture, and culture occupations established in the *Canadian Framework for Culture Statistics*[5] are used. As such, culture is defined as, "Creative artistic activity and the goods and services produced by it, and the preservation of human heritage." Culture occupations, then, are the occupations that are associated with these endeavours, such as actors, singers, musicians, performers, museum curators, librarians, authors, editors, chorographers and cinematographers (See Table 1 for a complete listing).

Broadly, the framework groups occupations as either culture occupations or culture support occupations. These groups are further separated into sub-groups of creative and artistic production occupations and heritage collection and preservation occupations for culture occupations. For culture support occupations, the sub-groups are culture management, technical and operational occupations and manufacturing occupations. In this paper, creative and artistic production occupations are also referred to as 'core culture' occupations.

The culture support occupations, other than some heritage related, will not be analysed in this paper, as they proved to be problematic in establishing concordances between Canadian and U.S. data, as well as in measuring them consistently over time. A factor in this has been the significant changes in the definitions and classifications of many of these occupations due to changes in technology.

For a more in-depth analysis, the core culture occupations are split into three subgroups, namely, Visual arts and design, Performing arts, and Literary arts. The rational for these groupings comes from the North American Industrial Classification System (NAICS) 2007 which utilizes similar subgroups for the culture industries.

These further groupings were analyzed at the lowest level of detail possible while still maintaining comparability across the two countries and three census periods.

Heritage collection and preservation occupations in this paper are not exactly as defined in the *Canadian Framework for Culture Statistics*. To ensure comparability over time, it was necessary to include three heritage-related occupations defined as support occupations, in addition to the three occupations defined as heritage occupations in the framework. See Table 1, for specific occupations in each group and sub-group, as defined by Canadian occupational classifications. Corresponding groupings were also obtained for the United States.

Table 1

Creative and artistic production culture occupations

Literary arts:
Authors and writers
Editors
Journalists
Visual arts and design:
Architects
Landscape architects
Industrial designers
Painters, sculptors, and other visual artists
Photographers
Graphic designers and illustrators
Interior designers
Theatre, fashion, exhibit and other creative designers
Artisans and craftspersons
Performing arts:
Actors and comedians
Producers, directors and choreographers
Conductors, composers and arrangers
Musicians and singers
Dancers
Other performers
Heritage collection and preservation culture occupations
Heritage occupations:
Librarians
Conservators and curators
Archivists
Library, archive, museum and art gallery managers
Library and archive technicians and assistants
Technical occupations related to museums and galleries

Source: Canadian Framework for Culture Statistics, Statistics Canada, 2004.

The primary indicator used in the report is the share of the workforce in culture occupations. This is calculated as the percent of the total workforce that culture occupations represent. A second indicator used is the growth rate of culture occupations. It is calculated as the change in employment in culture occupations divided by the initial level of employment in culture occupations. A third indicator is used only for the core culture subgroups; it is the share of core culture employment in each subgroup and is calculated as the level of employment in the subgroup divided by the level of employment in core culture occupations.

All data in this report are derived from Canadian and U.S. censuses for the years 1981, 1991 and 2001 and 1980, 1990 and 2000, respectively. Where necessary, these will be referred to as 1981, 1991 and 2001 (although the data for the United

States are for 1980, 1990 and 2000). For Canada, the data are derived from the long form of the census, a 20% sample. For the United States, the 5% public use micro-data sample (PUMS) was used to derive the data. The primary occupation reported was used to derive the levels of employment in each of the groups for each level of geography and time. A concordance was developed between both countries to ensure consistency over time.[6]

The sample of metropolitan areas, hereafter referred to as cities, was limited to those with an urban core population of at least 100,000. Data availability was an issue for some cities for the earliest period (1981). Due to this, some cities for which the data were not complete across all years were excluded.[7] After these exclusions, the sample consisted of 26 Canadian cities and 219 American cities. It is important to note that there is no Canadian counterpart in terms of size to the largest U.S. cities, such as New York and Los Angeles.[8]

Table 2
Number of cities by size and country, 2001

	Canada		United States		Total	
City population size	Number	Percent	Number	Percent	Number	Percent
100,000 to 249,999	10	38	70	32	80	33
250,000 to 499,999	7	27	63	29	70	29
500,000 to 999,999	5	19	38	17	43	18
1,000,000 to 1,999,999	2	8	25	11	27	11
2,000,000 to 3,999,999	1	4	14	6	15	6
Greater than 4,000,000	1	4	9	4	10	4
Total	26	100	219	100	245	100

Sources: Canadian census (2001) and U.S. census (2000).

As can be seen from Table 2, both countries follow a similar pattern in the distribution of cities by size of populations, with Canada having a slightly higher proportion in the smaller size classes than the United States. In each country, nearly two thirds of the cities have populations between 100,000 and 499,999, while 80% of the cities have populations between 100,000 and 999,999.

Finally, U.S data on rural areas include small urban areas with populations of less than 100,000. Thus to make Canadian data comparable it was necessary to group rural areas with small urban areas.[9] This combination is referred to as rural areas, and has the effect of masking the purely rural areas.

3. Where is employment in culture occupations found?

Employment in culture occupations appears to concentrate in large cities. To gain insight into this, the nature of this clustering is examined further, along with the urban-rural splits in Canada-U.S. distributions of culture employment.

Culture occupation employment nationally

In terms of the shares of employment, culture occupations make up a small but increasing portion of the overall workforce (see Table 3). At the national level, strong growth in core culture employment relative to the overall workforce is reflected in the increase in share for core culture employment in both countries. In Canada, the share of employment in culture occupations increased from 1.39% to 1.92%, while in the United States this share increased from 1.48% to 1.86%. Of note is that the increase in core culture share occurred in Canada in both the 1980s and 1990s while in the United States it increased in the 1980s and remained unchanged from 1990 to 2000; given that, Canada which had been behind the United States in 1980, surpassed the U.S. by 2000.

Employment in heritage culture occupations comprised a much smaller share of the workforce than core culture occupations. Canada had a slightly higher share of the workforce in heritage occupations than the United States but experienced a small decrease in share between 1981 and 2001 while the United States had a small increase in share from 1980 to 2000.

Table 3

Percentage shares of national heritage, core, and total culture employment, Canada and the United States, 1981-2001

	Canada			United States		
	1981	1991	2001	1980	1990	2000
	Percent					
Core culture workforce	1.11	1.34	1.66	1.28	1.65	1.65
Heritage culture workforce	0.28	0.29	0.25	0.20	0.19	0.21
Total culture workforce	1.39	1.62	1.92	1.48	1.84	1.86

Note: Due to rounding, some columns may not add up.
Sources: Canadian censuses 1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Rural Areas

At the rural level, the core culture occupations' share of the workforce was substantially lower than at the national level in both Canada and the United States (see Table 4). This share increased in both the 1980s and 1990s in Canada, while in the United States it increased in the 1980s and decreased slightly in the 1990s. Thus, although Canada had a lower share of core culture occupations than the United States in 1981, by 2001 Canada had a slightly higher share than the United States.

In the United States, heritage culture occupations' share of employment at the rural level was similar to the national level, both remaining near constant throughout the period. In rural areas in Canada heritage occupations' share of employment was somewhat below the national level.

Table 4

Percentage shares of culture employment by cities and rural areas, Canada and the United States, 1981-2001

	Canada			United States		
	1981	1991	2001	1980	1990	2000
	Percent					
Rural areas						
Core culture workforce	0.67	0.79	0.98	0.76	1.02	0.96
Heritage culture workforce	0.20	0.21	0.19	0.20	0.19	0.20
Total culture workforce	0.87	1.00	1.17	0.95	1.21	1.16
Cities						
Core culture workforce	1.39	1.63	2.01	1.50	1.91	1.88
Heritage culture workforce	0.33	0.33	0.28	0.20	0.19	0.21
Total culture workforce	1.72	1.96	2.29	1.70	2.10	2.09

Note: Due to rounding, some columns may not add up.
Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Cities

Culture shares of employment in cities generally followed a similar trend to the growth observed at the national level for both core and heritage culture workforces (see Table 4). Further, there is evidence that cities consistently had a higher share of culture employment compared to culture employment at the national level.

In terms of the share of the workforce in heritage occupations in the United States, cities are virtually identical to rural areas, indicating that heritage employment is not heavily concentrated in any one type of area. In Canada, the share of the workforce in heritage occupations in cities was substantially higher than in rural areas. Also of note is that the shares in rural areas in Canada are very similar to the corresponding shares in the United States. In conclusion, cities in Canada have higher shares of these occupations than cities or rural areas in the United States.

Table 5
Top 20 cities by core culture share of the workforce in 2001

City	2001		1991		1981		Change in rank from 1981 to 2001
	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank	
Stamford, Connecticut	3.77	1st	2.29	15th	2.12	6th	5
Los Angeles-Long Beach, California	3.18	2nd	2.77	3rd	2.16	5th	3
Santa Cruz, California	2.99	3rd	2.37	10th	2.18	4th	1
San Francisco-Oakland-Vallejo, California	2.98	4th	2.45	9th	2.06	7th	3
New York-Northeastern New Jersey	2.98	5th	2.94	1st	2.53	2nd	-3
Seattle-Everett, Washington	2.64	6th	2.45	8th	1.95	12th	6
Washington, District of Columbia/Maryland/Virginia	2.59	7th	2.91	2nd	2.67	1st	-6
Vancouver	2.56	8th	1.92	39th	1.45	51st	43
Madison, Wisconsin	2.52	9th	2.20	22nd	1.97	10th	1
Toronto	2.51	10th	1.98	33rd	1.75	20th	10
Victoria	2.50	11th	1.73	62nd	1.37	68th	57
Santa Barbara-Santa Maria-Lompoc, California	2.47	12th	2.46	7th	1.76	19th	7
Boston, Massachusetts	2.47	13th	2.68	5th	1.95	11th	-2
Fort Collins-Loveland, Colorado	2.41	14th	2.23	19th	1.67	23rd	9
Nashville, Tennessee	2.39	15th	2.35	12th	1.64	26th	11
Austin, Texas	2.38	16th	2.25	18th	1.93	13th	-3
Orlando, Florida	2.34	17th	2.03	28th	1.65	25th	8
Montréal	2.27	18th	1.93	37th	1.51	40th	22
Santa Rosa-Petaluma, California	2.26	19th	2.17	23rd	1.64	27th	8
Portland-Vancouver, Oregan/Washington	2.22	20th	2.12	26th	1.44	53rd	33

Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Core culture

Table 5 ranks cities by core culture share of the workforce in 2000. Canadian cities in the top 20 are Vancouver (8th), Toronto (10th), Victoria (11th), and Montreal (18th). All of these cities had substantial growth in terms of core culture shares over the past two decades. These increases were most dramatic in Victoria and Vancouver, whose shares both increased over 75%—bringing Vancouver to the highest level in Canada and from 51st to 8th place overall. All other Canadian cities in the top 20 also improved their rankings substantially. Other Canadian cities in the top 50 were Ottawa (42nd), Halifax (48th), and Calgary (50th) (see Appendix A).

The top ten American cities were typically very large cities or geographically near to one. Of the very large cities, Los Angeles had the highest share of the workforce in core culture occupations and was second highest overall. The remainder of the very large U.S. cities in the top ten were San Francisco, New York, Seattle, and Washington, DC. Other large American cities in the top twenty were; Boston (13th), Nashville (15th), Austin (16th), Orlando (17th) and Portland (20th).

Many of the smaller communities that have high core culture employment can be understood in relation to the much larger cities with high core culture employment they are near. The highest share of the workforce in core culture occupations was in Stamford, which is in close geographic proximity to New York, while Santa Cruz, which is geographically close to San Francisco, was third. Madison was the only smaller community in the top ten that was relatively far from a very large city with high core culture employment. This phenomenon may also play some role in Victoria's high ranking, as Vancouver is relatively close geographically but must be reached via plane or ferry, thus likely diminishing this effect.

Table 6
Top 20 cities by heritage culture share of the workforce in 2001

City	2001		1991		1981		Change in rank from 1981 to 2001
	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank	
Champaign-Urbana-Rantoul, Illinois	0.68	1st	0.71	2nd	0.54	6th	5
Madison, Wisconsin	0.62	2nd	0.58	5th	0.53	7th	5
New Haven-Meriden, Connecticut	0.54	3rd	0.63	4th	0.51	10th	7
Ottawa - Hull	0.53	4th	0.64	3rd	0.69	1st	-3
Saskatoon	0.51	5th	0.50	10th	0.57	5th	0
Halifax	0.49	6th	0.40	16th	0.58	3rd	-3
St. John's	0.49	7th	0.49	14th	0.52	9th	2
South Bend-Mishawaka, Indiana	0.48	8th	0.36	27th	0.26	68th	60
Regina	0.48	9th	0.50	11th	0.40	22nd	13
Gainesville, Florida	0.47	10th	0.49	12th	0.45	16th	6
Muncie, Indiana	0.46	11th	0.49	13th	0.42	19th	8
Ann Arbor, Michigan	0.46	12th	0.72	1st	0.66	2nd	-10
Columbia, Missouri	0.45	13th	0.31	42nd	0.40	23rd	10
Lexington-Fayette, Kentucky	0.44	14th	0.40	17th	0.33	44th	30
Washington, District of Columbia/Maryland/Virginia	0.43	15th	0.37	22nd	0.50	11th	-4
Baton Rouge, Louisiana	0.43	16th	0.27	57th	0.35	39th	23
Tuscaloosa, Alabama	0.43	17th	0.52	8th	0.33	43rd	26
Kingston	0.43	18th	0.51	9th	0.58	4th	-14
Duluth-Superior, Minnesota/Wisconsin	0.43	19th	0.18	122nd	0.29	50th	31
Eau Claire, Wisconsin	0.38	20th	0.22	83rd	0.14	188th	168

Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Heritage culture

Canadian cities were much more dominant in the rankings based on heritage culture share of the workforce, with five of the top ten and 12 of the top 50. Many of these were provincial capitals (see Table 6 and Appendix B). The national capital, Ottawa, had the highest share in Canada and ranked fourth overall, while the provincial capitals also had high shares. Other Canadian cities in the top ten were Saskatoon, Halifax, St. John's and Regina, respectively. It is interesting to note as well that the top-ranking Canadian cities in terms of the heritage culture share of the workforce were different from the top-ranking cities in the case of core culture employment.

In contrast to core culture share rankings, larger American cities were not in the top 20, with the exception of Washington, DC, the national capital. Interestingly, and following a similar trend in Canada, many state capitals were in the top 50. This trend of capital cities having generally higher shares of heritage culture is a reasonable one, when considering that most national, provincial, or state libraries, archives and museums are typically located in the capital city. This results in high heritage shares of employment in many of these cities. In the United States, many of the cities with the highest heritage culture share of the workforce have a major university or college and, to at least some extent, this appears to be true for Canada as well. This is likely important to the rankings, specifically with respect to the impact of a large college library on the heritage culture share of the workforce.

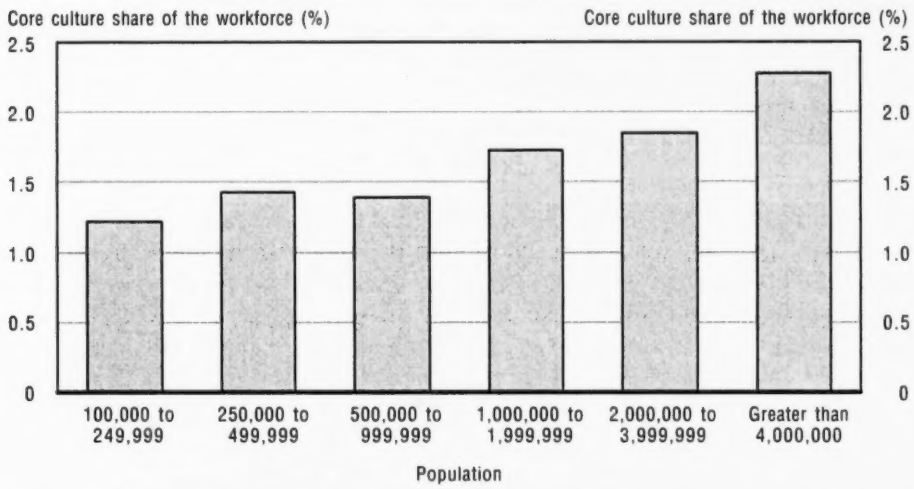
With the exception of Regina, all Canadian cities in the top 20 experienced declines in their heritage culture shares of the workforce over the past two decades. It was the reverse for the United States, with only two U.S. cities in the top 20 experiencing declines, namely, Ann Arbor, MI, and Washington, DC.

Population size and core culture share of the workforce

There are several reasons to believe that the population size of a city might be an important factor in determining the size of the core culture share of the workforce. Many culture activities require a large market to be viable. This may be due to high fixed costs, as associated with theatres, orchestras, opera companies and art galleries. Big cities offer to performing artists a large population from which it is comparatively easier to attract an (appreciative) audience.[10] Large cities also form a natural pooling of talent and resources that support the culture sector. The larger a city, the more easily it can generate economies of scale with these pools of resources. It is also often posited that larger cities are generally more accepting and tolerant of diverse view points and lifestyles that are associated with the creativity necessary to be successful in the culture sector, as new innovative and unique ideas are among the most highly regarded values of culture sector work. Another important aspect of larger cities is that they have larger workforces and a larger workforce implies greater diversity of the workforce.

Chart 1

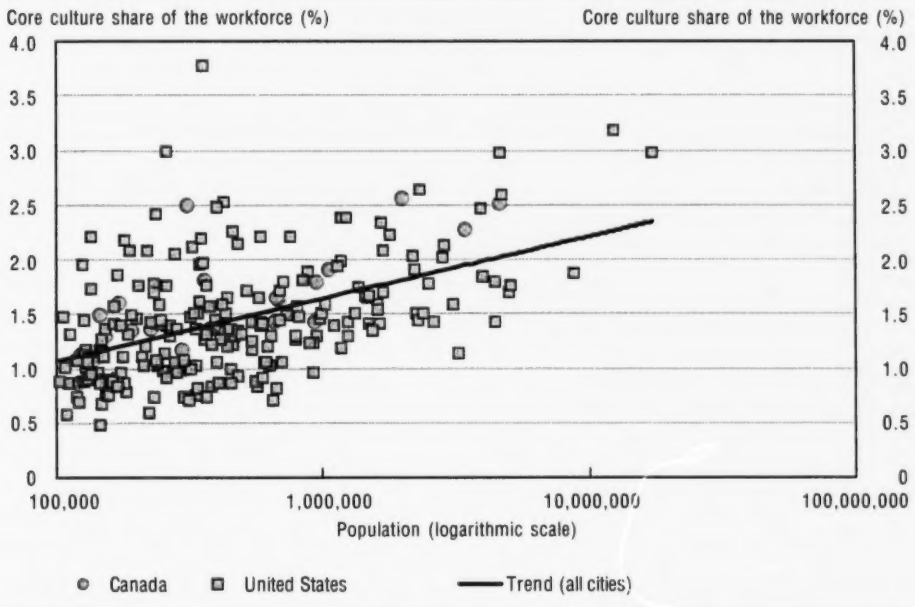
Core culture share of the workforce by city size, Canada and the United States, 2001



Source: Canadian census (2001) and U.S. census (2000).

Chart 2

Core culture share of the workforce by city population size, Canada and the United States, 2001



Source: Canadian census (2001) and U.S. census (2000).

In Chart 1, cities have been grouped according to size. The chart shows the generally higher core culture shares of the workforce in larger cities. Cities with a population of over four million have nearly twice the culture shares of the workforce as cities with a population between 100,000 and 249,999. This positive relationship between the size of a city and its culture share of the workforce is explored with regression analysis in Chart 2.

Regression is used to test the relationship between core culture shares of the workforce and city size. The natural log of the population size is used for city size to minimize the high degree of variability in population sizes. The relationship is positive (and statistically significant)[11] in both Canada and the United States. The R^2 value of 0.24 indicates that 24% of the variance in core culture share of the workforce can be explained by the population size of the city.[12] This relationship is evidence of the clustering of core culture occupations in larger cities. No such evidence was found for heritage occupations.

4. Changes in culture employment 1981 to 2001

The culture sector has seen a substantial increase in its role in the economy over the past 20 years and is critical in shaping a cohesive national social identity. In turn, there has been an increased interest in the importance of culture, in part as a reaction to the homogenizing influence of globalization.[13] The value of culture to societies is now recognized in free trade agreements in the form of exemptions of culture products from these agreements.[14] In light of this, the effects of globalization on Canada's culture sector and how Canada has performed relative to the United States are pertinent.

National growth rates

One way in which to compare the Canadian and U.S. culture sectors is through the growth rates of culture employment. The growth rates of the total workforce in both countries were very similar over the 20-year study period but culture employment grew relatively faster in Canada. From 1981 to 2001 Canada's total workforce grew 31.6% and the United States' by half a percentage point more at 32.1%. Over the same period, the culture workforce grew at a much faster rate than the overall workforce in both countries. In Canada core culture employment grew by 96.6%, compared to 70.6% for the United States (see Table 7); in Canada, the core culture workforce grew three times faster than the total workforce.

These high rates of growth were concentrated in the cities, the rural area rates of growth for employment in culture occupations being much lower than either the national or city growth rates. It should also be noted that a big contributor to the lower growth in core culture employment in the United States could be attributed to a slowdown in core culture growth in the 1990s. A growth rate of 11.7% in that decade only matched that of the overall workforce. This contrasted to Canada, where core growth edged slightly higher, to 40.2% in the 1990s, over three times that of the total workforce in the 1990s.

Table 7
Workforce growth rates, Canada and the United States, 1981-2001

	Canada 1981 to 2001			United States 1980 to 2000		
	National	Cities	Rural areas	National	Cities	Rural areas
	Percent					
Total workforce	31.58	42.71	15.71	32.12	49.74	4.49
Total culture workforce	81.14	90.32	54.89	66.12	85.42	27.18
Core culture workforce	96.56	106.13	67.50	70.64	89.76	32.75
Heritage workforce	19.57	25.71	12.48	37.47	63.26	5.69

Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Rural areas in Canada had higher growth than did those in the United States in all segments of the workforce examined. In the 1980s, the United States had substantially stronger growth in core culture, non-culture and total employment. Growth in heritage culture was nearly the same in both countries in the 1980s. In the 1990s Canada had much stronger core culture growth while heritage, non-culture and total employment growth was significantly lower than the United States.

Cities consistently have the highest growth rates in each segment of the workforce. Canadian cities have higher growth in core culture and total culture and lower growth in heritage culture and the total workforce as compared to cities in the United States (see Table 7).

Overall, culture occupations have much stronger growth than the total workforce as a whole. A potential extension of the current research would be to compare the culture sector with other sectors of the workforce individually rather than as an aggregate. This may enable the identification of other sectors whose growth may help or hinder culture sector growth and vice-versa. In addition, this would enable a more detailed comparison of growth in different sectors than is presented here.

Heritage occupations

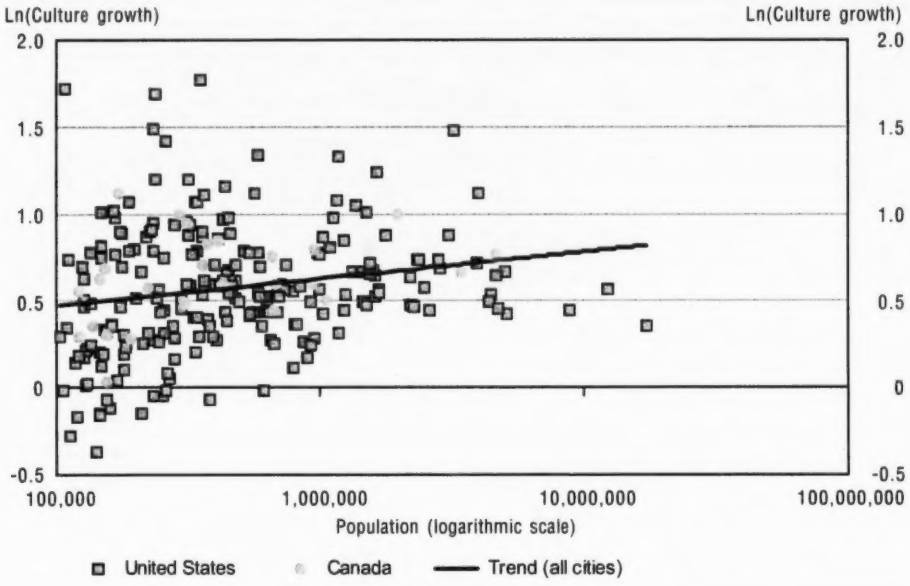
The heritage workforce follows the general trend of lower growth in rural areas. Additionally, heritage growth in the United States was substantially higher (37.5%) than in Canada (19.6%). This was due to Canada having a *dramatic* drop in growth in the 1990s, causing a 0.3% decline in heritage employment, compared with 22.3% growth in the United States. This likely reflects the significant government cutbacks that occurred in the mid-nineties as governments balanced their books. Many heritage institutions rely on government funding for on-going operations or are public institutions. An important difference between Canada and the United States is that in Canada the heritage workforce has grown at a rate much less than the total workforce at the national level, in rural areas, and in large cities over the period. The opposite is true of heritage workforce growth in the United States, where the heritage workforce has actually grown more than the total workforce. This difference was due to the substantial drop in Canada in the 1990s compared to the 1980s when heritage culture employment growth was higher than total employment growth.

City size related to core culture growth

As previously shown, the population size of a city in 2001 had a positive relationship with the core culture share of the workforce. That is, large cities have higher shares of core culture employment. To assess if this is increasingly the case, the relationship between core culture growth and city size is explored. Of interest here is the question of whether large cities are becoming even more important than they already are in terms of culture employment.

Chart 3

Core culture growth 1981 to 2001 by city population size, Canada and the United States



Source: Canadian censuses (1981 and 2001) and U.S. censuses (1980 and 2000).

Regression is used to probe the relationship between the growth of core culture employment from 1981 to 2001 and population size in 2001, using the ratio of core culture employment in 2001 to core culture employment in 1981 and the population size of the city in 2001 as variables.[15] The relationship found between population size and growth of core culture employment was positive and statistically significant[16] (see Chart 3). This relationship is, however, not deterministic. It is possible for small cities to have substantial growth, as well as for large cities to have little or no growth, but on average, the larger cities have stronger growth than the smaller cities. For example, the average growth rate in cities with population sizes of over one million was 106.9% while for cities with population sizes less than one million it was 84.6%. In particular, the low R-squared value (0.04) suggests that factors other than the size of the city are also important for culture employment growth.[17] This is no surprise as there is a very high degree of variability in growth rates. Combined with the relatively low growth in rural areas, this finding suggests employment in culture occupations is increasingly concentrated (or concentrating) in larger cities.

There are a small number of cities with very high core culture growth rates (six cities over 300%) and 14 with negative growth rates. Almost all of these cities with very high or negative growth rates had populations of less than 1,000,000. This very high degree of variability in small cities is not as prevalent in larger cities. No city with a population over 5 million had growth over 100% and most were closer to 50%; at the same time, no city of this size had growth less than 40%. Thus it appears there may be a floor and a ceiling on growth in very large cities.

5. Core culture sub-groups

The core culture occupations can be further sub-divided into other groups with related activities. For the purposes of this analysis they will be split into three sub-groups — visual arts and design, performing arts, and literary arts. This is done as the broader category of core culture occupations may mask specialization among cities (e.g., Los Angeles and Vancouver in movies). These three sub-groups will be analysed for selected culturally important cities, as well as at the national level. The selected cities are New York, Los Angeles, Chicago, Washington, Chicago, Boston, San Francisco, Toronto, Vancouver, Montreal and Ottawa. These cities were selected as they are among the largest and most culturally significant culture clusters in each country.

Core culture at the national level

Before analyzing these core culture sub-groups at the city level, they are examined at the national level. Nationally, the core culture share of the workforce was very similar, but there were considerable differences in its composition.

Of the three core culture sub-groups, visual arts and design makes up the largest share of the core culture workforce. This is partly due to the larger number of occupations encompassed in this group, as it includes visual arts occupations such as painters and sculptors, but also graphic artists, designers, and architects (see Table 1). In both Canada and the United States this sub-group makes up over 50% of the core culture group (54.0% in Canada and 58.6% in the United States) (see Table 8).

While there is little difference between Canada and the United States in the visual arts and design sub-group share of the core culture workforce, that is not the case for the performing arts sub-group. Nationally, the performing arts share of the core culture workforce in Canada (27.7%) was higher than in the United States (17.6%). The United States had a larger share of their core culture workforce in the literary arts (23.9%) than Canada (18.3%).

Table 8

Shares of the workforce in heritage, core, and core culture sub-groups, Canada and the United States, 2001

	Canada 2001		United States 2000	
	Share of the workforce	Share of core	Share of the workforce	Share of core
			Percent	
Core culture workforce	1.66	100.00	1.65	100.00
Literary arts	0.30	18.32	0.39	23.91
Performing arts	0.46	27.66	0.29	17.55
Visual arts and design	0.90	54.02	0.96	58.54
Heritage culture workforce	0.25	...	0.21	...

... not applicable

Sources: Canadian census (2001) and U.S. census (2000).

When comparing Canada and the United States for the three core culture sub-groups, it can be seen that the United States had a higher share of the overall workforce in literary arts than Canada. At the national level the United States had 0.39% compared to Canada's 0.30% of the total workforce. In terms of performing arts share of the workforce, Canada (0.46%) leads with a share approximately 50% greater than the United States (0.29%). With respect to the visual arts and design sub-group, the United States had a slightly higher share of the overall workforce than Canada, 0.96% and 0.90% respectively.

In Canada the share of the core culture workforce represented by performing arts was much higher than in the United States—10 percentage points above the U.S. share of core culture. The tables were turned with respect to literary arts which were approximately 5 percentage points higher in the United States.

In Canada, literary arts made up approximately one fifth of core culture employment, performing arts more than one quarter, and visual arts a little more than a half. In the United States, visual arts also made up more than one half of core culture employment, literary arts made up slightly less than one quarter and performing arts made up less than one fifth. Thus the performing arts are relatively more prevalent in Canada than the United States, while in the United States literary arts are relatively more prevalent.

Selected cities

A number of cities were selected because they had high shares of core culture employment, and had the highest levels of core culture employment (in terms of the size of the core culture workforce) in each country. Each city, ranked by its core culture share of the workforce, is presented in Table 9.

The overall core culture share of the workforce was highest in Los Angeles, followed by a tie for second between New York and San Francisco. Vancouver (5th) was the highest in Canada followed closely by Toronto (6th).

As the capital cities of each country, Ottawa and Washington share certain characteristics. In terms of the heritage shares of the workforce, Ottawa had the highest, followed by Washington. This is due to national institutions being concentrated in these cities, such as national libraries, archives and museums (see Table 9).

Literary arts' highest share of the workforce was in Washington, followed by New York and San Francisco. In terms of shares of the core culture workforce, both national capitals had high shares in the literary arts, with Washington (41.5%) first and Ottawa (35.2%) second.

Table 9
Shares of overall workforce, selected cities, 2001

	Core		Literary arts		Performing arts		Visual arts and design		Heritage	
	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank
Los Angeles	3.18	1st	0.65	6th	0.92	1st	1.61	2nd	0.17	10th
New York	2.98	2nd	0.86	2nd	0.60	5th	1.52	3rd	0.26	6th
San Francisco	2.98	3rd	0.80	3rd	0.41	6th	1.77	1st	0.21	9th
Washington	2.59	4th	1.07	1st	0.38	7th	1.13	8th	0.43	2nd
Vancouver	2.56	5th	0.39	10th	0.85	2nd	1.32	6th	0.29	4th
Toronto	2.51	6th	0.47	8th	0.71	3rd	1.33	5th	0.22	8th
Boston	2.47	7th	0.71	4th	0.33	9th	1.43	4th	0.35	3rd
Montreal	2.27	8th	0.41	9th	0.64	4th	1.23	7th	0.28	5th
Ottawa	1.90	9th	0.67	5th	0.36	8th	0.87	10th	0.53	1st
Chicago	1.86	10th	0.49	7th	0.24	10th	1.13	8th	0.25	7th

Sources: Canadian census (2001) and U.S. census (2000).

In terms of the performing arts share of the workforce, Los Angeles was the highest, with 0.92% (see Table 9), no doubt due in part to Hollywood. But positions two, three and four were Vancouver, Toronto, and Montreal, respectively. All are active fashion, film and theatre centres. This is a reflection of the overall higher performing arts share of the workforce in Canada than in the United States. The picture changed when looking at the shares of the core culture workforce in the performing arts—Vancouver had the highest share with 33%, while Los Angeles had 29% and Montreal and Toronto both had 28% (see Table 10). This means that while performing arts occupations comprise a larger share of the overall workforce in Los Angeles, they are relatively more important to employment in core culture occupations in Vancouver.

The visual arts and design sub-group was dominated by cities in the United States, with San Francisco at the top, followed by Los Angeles, New York, and Boston. While the share of the core culture workforce in the visual arts was highest in Chicago, the visual arts share of the overall workforce there was the lowest in the United States (tied with Washington), the only city lower being Ottawa. In terms of shares of core culture, visual arts made up approximately half of the core culture workforce in each city; the lowest shares were in Washington and Ottawa, 43.8% and 45.8%, while Chicago, Boston and San Francisco had the highest shares with 60.4%, 58.1% and 59.3%, respectively.

Table 10
Shares of the core culture workforce, selected cities, 2001

	Literary arts		Performing arts		Visual arts and design	
	Percentage share	Rank	Percentage share	Rank	Percentage share	Rank
Los Angeles	20.31	7th	28.92	2nd	50.78	8th
New York	28.84	3rd	20.01	5th	51.15	7th
San Francisco	26.83	5th	13.85	8th	59.32	2nd
Washington	41.51	1st	14.65	7th	43.84	10th
Vancouver	15.38	10th	33.16	1st	51.46	6th
Toronto	18.82	8th	28.30	3rd	52.88	5th
Boston	28.56	4th	13.37	9th	58.07	3rd
Montreal	17.89	9th	28.10	4th	54.01	4th
Ottawa	35.17	2nd	18.99	6th	45.84	9th
Chicago	26.44	6th	13.11	10th	60.45	1st

Sources: Canadian census (2001) and U.S. census (2000).

From examining the share of the core culture workforce in each sub-group in the selected cities, we find that different types of culture employment clustered in different cities. Ottawa and Washington both had high shares of the workforce in heritage. Ottawa and Washington both also had high shares of the core culture workforce in literary arts, while Los Angeles, Vancouver, Montreal and Toronto all had high performing arts shares of the core culture workforce. The cities that appear to be more specialized in visual arts are Chicago, Boston and San Francisco. At least some culture clusters seem to specialize in specific sub-groups of culture employment. Others appear to have a greater diversity in their culture employment. There are distinct patterns underlying the composition of employment in culture occupations, with cities specializing in different forms of culture activities.

6. Conclusion

Culture employment in Canada and the United States had many similarities during the 1981 to 2001 period. In both countries culture employment grew significantly faster than the overall workforce, with Canada leading the United States. This resulted in the culture shares of the workforce growing over the 20 years. In terms of the culture shares of the workforce, Canada was behind the United States in 1981 but the two countries were virtually tied by 2001.

Cities and rural areas differed greatly in terms of culture employment, and cities also varied greatly depending on population size. In general, cities had higher shares of culture employment than rural areas, with larger cities tending to have the highest. Collectively, the ten cities with populations over four million had nearly twice the core culture share of the workforce as those at the smallest end of the spectrum with populations between 100,000 and 249,999. As well, the culture workforce growth rates in the cities were higher than the rural areas; this reflected the general tendency in the overall workforce towards stronger growth in cities.

Specific Canadian cities that the data indicate to be important centers of culture production in a North American context are Vancouver, Toronto, Victoria and Montreal. Over the twenty-year period all four of these cities became relatively more important in the North American context, with Vancouver and Victoria experiencing remarkable increases in their North American rankings.

In terms of the composition of the core culture workforce, the largest share was in visual arts and design. This could be expected because this represents a combination of both visual arts occupations and design occupations. Further, these occupations are frequently found in non-culture industries such as advertising and promotion.[18] This was true for both Canada and the United States. Meanwhile, Canada had a larger share of its culture employment in the performing arts while the United States had a larger share in literary arts. A common thread between the two countries was that the highest shares of employment in heritage culture were in the national capitals.

Overall, culture employment was more important to the United States in terms of employment at the beginning of the study period, but by the end of the study period Canada had caught up to and slightly surpassed the United States. Culture employment was also found to cluster in cities, and disproportionately so in larger cities. As well, at least some cities appear to show specialization in some culture sub-groups.

Appendix A

Core culture share of the workforce

		1981	1991	2001
Rank in 2001	Geographic region	Share	Share	Share
1st	Stamford, Connecticut	2.12	2.29	3.77
2nd	Los Angeles-Long Beach, California	2.16	2.77	3.18
3rd	Santa Cruz, California	2.18	2.37	2.99
4th	San Francisco-Oakland-Vallejo, California	2.06	2.45	2.98
5th	New York-Northeastern New Jersey	2.53	2.94	2.98
6th	Seattle-Everett, Washington	1.95	2.45	2.64
7th	Washington, District of Columbia/Maryland/Virginia	2.67	2.91	2.59
8th	Vancouver	1.45	1.92	2.56
9th	Madison, Wisconsin	1.97	2.20	2.52
10th	Toronto	1.75	1.98	2.51
11th	Victoria	1.37	1.73	2.50
12th	Santa Barbara-Santa Maria-Lompoc, California	1.76	2.46	2.47
13th	Boston, Massachusetts	1.95	2.68	2.47
14th	Fort Collins-Loveland, Colorado	1.67	2.23	2.41
15th	Nashville, Tennessee	1.64	2.35	2.39
16th	Austin, Texas	1.93	2.25	2.38
17th	Orlando, Florida	1.65	2.03	2.34
18th	Montréal	1.51	1.93	2.27
19th	Santa Rosa-Petaluma, California	1.64	2.17	2.26
20th	Portland-Vancouver, Oregon/Washington	1.44	2.12	2.22
21st	Ventura-Oxnard-Simi Valley, California	1.61	1.96	2.21
22nd	State College, Pennsylvania	1.38	2.03	2.21
23rd	Sarasota, Florida	1.89	2.33	2.20
24th	Trenton, New Jersey	1.89	2.46	2.19
25th	Medford, OR	1.37	2.20	2.18
26th	Champaign-Urbana-Rantoul, Illinois	1.97	2.36	2.17
27th	Ann Arbor, Michigan	2.25	2.71	2.15
28th	Minneapolis-St. Paul, Minnesota	1.61	2.22	2.13
29th	Eugene-Springfield, Oregon	1.56	1.82	2.11
30th	San Jose, California	1.55	2.16	2.08
31st	Cedar Rapids, Iowa	0.88	1.63	2.08
32nd	Gainesville, Florida	1.40	2.03	2.08
33rd	Salinas-Sea Side-Monterey, California	1.52	2.29	2.05
34th	Denver-Boulder-Longmont, Colorado	1.55	1.97	2.03
35th	San Diego, California	1.47	1.92	2.02
36th	Raleigh-Durham, North Carolina	1.44	1.83	1.99
37th	New Haven-Meriden, Connecticut	1.86	1.84	1.97
38th	Bridgeport, Connecticut	1.27	1.48	1.95
39th	Waterloo-Cedar Falls, Iowa	1.01	1.43	1.95
40th	West Palm Beach-Boca Raton-Delray Beach, Florida	1.50	1.98	1.93
41st	Miami-Hialeah, Florida	1.60	1.75	1.91
42nd	Ottawa - Hull	1.79	1.81	1.90
43rd	Honolulu, Hawaii	1.59	1.82	1.88
44th	Chicago-Gary-Lake Illinois	1.40	1.89	1.86
45th	Bellingham, Washington	1.29	0.99	1.86
46th	Atlanta, Georgia	1.42	2.00	1.84
47th	Tucson, Arizona	1.69	1.99	1.81
48th	Halifax	1.21	1.43	1.80
49th	Detroit, Michigan	1.23	1.72	1.80
50th	Calgary	1.30	1.44	1.79

Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

Appendix B

Heritage culture share of the workforce

		1981	1991	2001
Rank in 2001	Geographic region	Share	Share	Share
1st	Champaign-Urbana-Rantoul, Illinois	0.54	0.71	0.68
2nd	Madison, Wisconsin	0.53	0.58	0.62
3rd	New Haven-Meriden, Connecticut	0.51	0.63	0.54
4th	Ottawa - Hull	0.69	0.64	0.53
5th	Saskatoon	0.57	0.50	0.51
6th	Halifax	0.58	0.40	0.49
7th	St. John's	0.52	0.49	0.49
8th	South Bend-Mishawaka, Indiana	0.26	0.36	0.48
9th	Regina	0.40	0.50	0.48
10th	Gainesville, Florida	0.45	0.49	0.47
11th	Muncie, Indiana	0.42	0.49	0.46
12th	Ann Arbor, Michigan	0.66	0.72	0.46
13th	Columbia, Missouri	0.40	0.31	0.45
14th	Lexington-Fayette, Kentucky	0.33	0.40	0.44
15th	Washington, Columbia/Maryland/Virginia	0.50	0.37	0.43
16th	Baton Rouge, Louisiana	0.35	0.27	0.43
17th	Tuscaloosa, Alabama	0.33	0.52	0.43
18th	Kingston	0.58	0.51	0.43
19th	Duluth-Superior, Minnesota/Wisconsin	0.29	0.18	0.43
20th	Eau Claire, Wisconsin	0.14	0.22	0.38
21st	Victoria	0.48	0.43	0.37
22nd	Eugene-Springfield, Oregon	0.36	0.34	0.37
23rd	Sheboygan, Wisconsin	0.13	0.23	0.37
24th	New Bedford, Massachusetts	0.11	0.21	0.37
25th	Bloomington-Normal, Illinois	0.45	0.39	0.37
26th	Benton Harbor, Michigan	0.26	0.15	0.36
27th	Boston, Massachusetts	0.34	0.32	0.35
28th	Stamford, Connecticut	0.27	0.35	0.34
29th	Toledo, Ohio/Michigan	0.29	0.21	0.34
30th	Québec	0.38	0.36	0.33
31st	Hartford-Bristol-Middleton-New Britain, Connecticut	0.26	0.37	0.33
32nd	Edmonton	0.34	0.32	0.32
33rd	Albany-Schenectady-Troy, New York	0.38	0.30	0.32
34th	Kalamazoo-Portage, Michigan	0.37	0.26	0.32
35th	Monroe, Louisiana	0.26	0.31	0.31
36th	Cedar Rapids, Iowa	0.17	0.26	0.31
37th	Springfield-Holyoke-Chicopee, Massachusetts	0.25	0.15	0.31
38th	Rochester, New York	0.25	0.27	0.31
39th	Omaha, Nebraska/Iowa	0.18	0.14	0.31
40th	Sherbrooke	0.18	0.29	0.30
41st	Olympia, Washington	0.37	0.20	0.30
42nd	Cleveland, Ohio	0.25	0.25	0.30
43rd	Vancouver	0.36	0.29	0.29
44th	Trois-Rivières	0.47	0.34	0.29
45th	St. Cloud, Minnesota	0.25	0.33	0.29
46th	Tucson, Arizona	0.20	0.15	0.29
47th	Santa Cruz, California	0.26	0.22	0.29
48th	Trenton, New Jersey	0.45	0.52	0.29
49th	Yakima, Washington	0.17	0.03	0.29
50th	Santa Barbara-Santa Maria-Lompoc, California	0.27	0.25	0.29

Sources: Canadian censuses (1981, 1991 and 2001) and U.S. censuses (1980, 1990 and 2000).

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Endnotes

1. Examples are Canadian content regulations and culture goods exemptions from free trade agreements.
2. External Advisory Committee on Cities and Communities. 2006. *From Restless Communities to Resilient Places: Building a Stronger Future for All Canadians.*
3. Coish, David. *Census Metropolitan Areas as Culture Clusters,* Culture, Tourism and the Centre for Education Statistics. Cat. No. 89-613-MWE2004004.
4. See Film BC website, http://film.bc.ca
5. Culture Statistics Program. 2004. *Canadian Framework for Culture Statistics.* Culture, Tourism and the Centre for Education Statistics Research Paper Series. 81-595-MIE200421. Ottawa: Statistics Canada.
6. When comparing data from this report to others, caution needs to be used to account for potential differences in occupational definitions and geography.
7. The criterion for exclusion was more than one data point missing. One Canadian city was excluded, along with five U.S. cities.
8. The small number of Canadian cities also has an impact on the strength of the relationship required for statistical significance.
9. Small urban areas in Canada with populations under 100,000 are also known as census agglomerations. Another forthcoming report (Schimpf et Sereda 2007, "Towards a Geography of Culture: Culture Occupations Across the Canadian Urban-Rural Divide") investigates culture employment across all sizes of Canadian cities.
10. Glaeser E., Gottlieb J. 2006. "Urban Resurgence and the Consumer City" *Urban Studies,* 43(8):1275-1299
11. When using the populations and core culture shares of the workforce for all 245 Canadian and U.S. cities as observations, the relationship conformed to *(Core share) = 0.0025Ln(population) - 0.0179* and was statistically significant. Standard error = 0.003, t = 8.74.
12. R^2 is a measure that shows how much of the variance in one variable can be explained by the variance of another.
13. Canadian content regulations for radio and television broadcasting are an example of this.
14. Culture products are exempt from the North American Free Trade Agreement (NAFTA).
15. For both variables the natural log is used to transform the values to minimize the high degree of variability inherent in growth rates and population sizes.
16. In this model the natural log of the ratio of core culture employment in 2000 to core culture employment in 1980 Ln(Culture growth) and the populations of all 245 Canadian and American cities were used as observations. The positive relationship evident in Chart 3 was statistically significant, and conformed to Ln(Culture growth) = 0.0677Ln(Population) - 0.3093. Standard error = 0.021, t = 3.15.
17. With an R^2 value of 0.04 the population size of a city can explain 4% of the variance in the growth in core culture employment.
18. This relationship between culture occupations and the industry spectrum will be explored in a future paper (Schimpf 2007, "Creative Input: The Role of Culture Occupations in the Economy During the 1990s.")

Culture, Tourism and the Centre for Education Statistics

Research Papers

Cumulative index

Statistics Canada's **Division of Culture, Tourism and the Centre for Education Statistics** develops surveys, provides statistics and conducts research and analysis relevant to current issues in its three areas of responsibility.

The **Culture Statistics Program** creates and disseminates timely and comprehensive information on the culture sector in Canada. The program manages a dozen regular census surveys and databanks to produce data that support policy decision and program management requirements. Issues include the economic impact of culture, the consumption of culture goods and services, government, personal and corporate spending on culture, the culture labour market, and international trade of culture goods and services. Analysis is also published in *Focus on Culture* (87-004-XIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=87-004-X).

The **Tourism Statistics Program** provides information on domestic and international tourism. The program covers the Canadian Travel Survey and the International Travel Survey. Together, these surveys shed light on the volume and characteristics of trips and travellers to, from and within Canada.

The **Centre for Education Statistics** develops and delivers a comprehensive program of pan-Canadian education statistics and analysis in order to support policy decisions and program management, and to ensure that accurate and relevant information concerning education is available to the Canadian public and to other educational stakeholders. The Centre conducts fifteen institutional and over ten household education surveys. Analysis is also published in *Education Matters* (81-004-XIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=81-004-X), and in the *Analytical Studies Branch research paper series* (11F0019MIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=11F0019M).

Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

81-595-MIE2002001	Understanding the rural-urban reading gap
81-595-MIE2003002	Canadian education and training services abroad: the role of contracts funded by international financial institution
81-595-MIE2003003	Finding their way: a profile of young Canadian graduates
81-595-MIE2003004	Learning, earning and leaving – The relationship between working while in high school and dropping out
81-595-MIE2003005	Linking provincial student assessments with national and international assessments
81-595-MIE2003006	Who goes to post-secondary education and when: Pathways chosen by 20 year-olds
81-595-MIE2003007	Access, persistence and financing: First results from the Postsecondary Education Participation Survey (PEPS)
81-595-MIE2003008	The labour market impacts of adult education and training in Canada
81-595-MIE2003009	Issues in the design of Canada's Adult Education and Training Survey
81-595-MIE2003010	Planning and preparation: First results from the Survey of Approaches to Educational Planning (SAEP) 2002
81-595-MIE2003011	A new understanding of postsecondary education in Canada: A discussion paper
81-595-MIE2004012	Variation in literacy skills among Canadian provinces: Findings from the OECD PISA
81-595-MIE2004013	Salaries and salary scales of full-time teaching staff at Canadian universities, 2001-2002: final report
81-595-MIE2004014	In and out of high school: First results from the second cycle of the Youth in Transition Survey, 2002
81-595-MIE2004015	Working and Training: First Results of the 2003 Adult Education and Training Survey
81-595-MIE2004016	Class of 2000: Profile of Postsecondary Graduates and Student Debt
81-595-MIE2004017	Connectivity and ICT integration in Canadian elementary and secondary schools: First results from the Information and Communications Technologies in Schools Survey, 2003-2004

Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

81-595-MIE2004018	Education and labour market pathways of young Canadians between age 20 and 22: an Overview
81-595-MIE2004019	Salaries and salary scales of full-time teaching staff at Canadian universities, 2003-2004
81-595-MIE2004020	Culture Goods Trade Estimates: Methodology and Technical Notes
81-595-MIE2004021	Canadian Framework for Culture Statistics
81-595-MIE2004022	Summary public school indicators for the provinces and territories, 1996-1997 to 2002-2003
81-595-MIE2004023	Economic Contribution of Culture in Canada
81-595-MIE2004024	Economic Contributions of the Culture Sector in Ontario
81-595-MIE2004025	Economic Contribution of the Culture Sector in Canada – A Provincial Perspective
81-595-MIE2004026	Who pursues postsecondary education, who leaves and why: Results from the Youth in Transition Survey
81-595-MIE2005027	Salaries and salary scales of full-time teaching staff at Canadian universities, 2002-2003: final report
81-595-MIE2005028	Canadian School Libraries and Teacher-Librarians: Results from the 2003/04 Information and Communications Technologies in Schools Survey
81-595-MIE2005029	Manitoba Postsecondary Graduates from the Class of 2000: How Did They Fare?
81-595-MIE2005030	Salaries and Salary Scales of Full-time teaching Staff at Canadian Universities, 2004-2005: Preliminary Report
81-595-MIE2005031	Salaries and salary scales of full-time teaching staff at Canadian universities, 2003-2004: final report
81-595-MIE2005032	Survey of Earned Doctorates: A Profile of Doctoral Degree Recipients
81-595-MIE2005033	The Education Services Industry in Canada
81-595-MIE2005034	Connectivity and ICT Integration in First Nations Schools: Results from the Information and Communications Technologies in Schools Survey, 2003/04
81-595-MIE2005035	Registered Apprentices: A Class Ten Years Later

Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

81-595-MIE2005036	Participation in Postsecondary Education: Evidence from the Survey of Labour Income Dynamics
81-595-MIE2006037	Economic Contribution of the Culture sector to Canada's Provinces
81-595-MIE2006038	Profile of Selected Culture Industries in Ontario
81-595-MIE2006039	Factors Affecting the Repayment of Student Loans
81-595-MIE2006040	Culture Goods Trade Data User Guide
81-595-MIE2006041	Health Human Resources and Education: Outlining Information Needs
81-595-MIE2006042	How Students Fund Their Postsecondary Education: Findings from the Postsecondary Education Participation Survey
81-595-MIE2006043	Educational Outcomes at Age 19 Associated with Reading Ability at Age 15
81-595-MIE2006044	Summary Public School Indicators for the Provinces and Territories, 1997-1998 to 2003-2004
81-595-MIE2006045	Follow-up on Education and Labour Market Pathways of Young Canadians Aged 18 to 20 – Results from YITS Cycle 3
81-595-MIE2006046	Salaries and Salary Scales of Full-time Teaching Staff at Canadian Universities, 2005/2006: Preliminary Report
81-595-MIE2006047	Canada Student Loans Repayment Assistance: Who Does and Does Not Use Interest Relief?
81-595-MIE2006048	Salaries and Salary Scales of Full-time Teaching Staff at Canadian Universities, 2004/2005: Final Report
81-595-MIE2007049	Educating Health Workers: A Statistical Portrait
81-595-MIE2007050	Summary Public School Indicators for the Provinces and Territories, 1998-1999 to 2004-2005
81-595-MIE2007051	Culture Employment in a North American Context